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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,019	09/23/2005	Sumie Suda	278231US0PCT	3841
22850 7590 12/22/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER FOGARTY, CAITLIN ANNE				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/550,019

Applicant(s)

SUDA ET AL.

Examiner

CAITLIN FOGARTY

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 29, 2008 has been entered.

Status of Claims

2. Claims 1 – 14 are pending where claims 1, 3, 7, and 9 – 14 have been amended.

Status of Previous Objections and Rejections

3. The objection to claims 2 and 3 as being of improper dependent form has been withdrawn in view of the amendment filed October 29, 2008.

The objection to claims 1, 4, and 8 – 14 due to informalities has been withdrawn in view of the amendment filed October 29, 2008.

The 35 U.S.C. 103(a) rejection of claims 1 – 4, 9, and 12 as being unpatentable over the English machine translation of Nagao et al. (JP 2002-212665) has been maintained.

The 35 U.S.C. 103(a) rejection of claims 1 – 14 as being unpatentable over Hashimura et al. (US 6,338,763) has been maintained.

The provisional rejection of claims 1 – 4 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/549,753 has been maintained.

Claim Objections

4. Claim 7 is objected to because of the following informalities: claim 7 recites two ranges for Cr. The old range of 1.3% to 4.0% was not deleted when the new range of 1.5 to 2.6% was added. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1 – 4, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English machine translation of Nagao et al. from the IDS (JP 2002-212665).

With respect to instant claims 1, 9, and 12, the abstract and [0009]-[0010] of Nagao disclose a spring steel with a clearly overlapping composition as shown in Table 1 below.

Table 1

Element	Instant Claims 1, 9, 12 (mass %)	Nagao et al. (mass %)	Overlapping Range (mass %)
C	0.5 – 0.8	0.37 – 0.8	0.5 – 0.8
Si	1.2 – 2.5	≤ 3.0	1.2 – 2.5
Mn	0.2 – 1.5	0.2 – 2.0	0.2 – 1.5
Cr	1.5 – 4.0	≤ 3.0	1.5 – 3.0
V	0 – 0.5	≤ 0.01	0 – 0.01
P	0 < P < 0.02	≤ 0.01	0 < P < 0.01
S	0 < S < 0.02	≤ 0.03	0 < S < 0.02
Al	0 < Al < 0.01	≤ 0.1	0 < Al < 0.01
Fe + impurities	Balance	Balance	Balance

Nagao does not specifically teach the formula (2) recited in instant claim 1. However, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those ordinary skilled in the art. *In re Austin, et al.*, 149 USPQ 685, 688. The claim limitations "consisting essentially of" in instant claim 9 and "consisting of" in instant claim 12 are satisfied by the spring steel of Nagao because Nagao does not teach that the spring steel must contain any elements other than those recited in instant claims 9 and 12.

Instant claims 2 and 3 further limit the compositions of Mn and Cr in the spring steel. However, the composition of the spring steel disclosed by Nagao still overlaps with the compositions recited in instant claims 2 and 3.

Instant claim 4 recites that the spring steel further comprises at least one selected from Ni: 0.5% or less excluding 0% and Mo: 0.4% or less excluding 0%. Paragraph [0010] of Nagao teaches that the spring steel may also comprise ≤ 2.0 mass% Ni and/or ≤ 1.0 mass% Mo. Both of these ranges overlap with the compositional ranges of Ni and Mo recited in instant claim 4.

Since the claimed compositional ranges of claims 1 – 4, 9 and 12 either overlap or are within the ranges disclosed by Nagao, a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to select the claimed spring steel composition from the spring steel composition disclosed by Nagao because Nagao teaches the same utility (i.e. steel for a spring) in the whole disclosed range.

7. Claims 1 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimura et al. (US 6,338,763).

With respect to instant claims 1, 9, and 12, col. 3 lines 26-45 of Hashimura disclose a spring steel with a clearly overlapping composition as shown in Table 2 below.

Table 2			
Element	Instant Claims 1, 9, 12 (mass %)	Hashimura et al. (mass %)	Overlapping Range (mass %)
C	0.5 – 0.8	0.4 – 0.7	0.5 – 0.7
Si	1.2 – 2.5	1.2 – 2.5	1.2 – 2.5
Mn	0.2 – 1.5	0.1 – 0.5	0.2 – 0.5
Cr	1.5 – 4.0	0.4 – 2.0	1.5 – 2.0
V	0 – 0.5	0.05 – 0.4	0.05 – 0.4
P	0 < P < 0.02	≤ 0.015	0 < P < 0.015
S	0 < S < 0.02	≤ 0.015	0 < S < 0.015
Al	0 < Al < 0.01	0.0001 – 0.005	0.0001 < Al < 0.005
Fe + impurities	Balance	Balance	Balance

Hashimura does not specifically teach the formula (2) recited in instant claim 1.

However, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those ordinary skilled in the art. *In re Austin, et al.*, 149 USPQ 685, 688. The claim limitations “consisting essentially of” in instant claim 9

and “consisting of” in instant claim 12 are satisfied by the spring steel of Hashimura because Hashimura does not teach that the spring steel must contain any elements other than those recited in instant claims 9 and 12.

Instant claims 2 and 3 further limit the compositions of Mn and Cr in the spring steel. However, the composition of the spring steel disclosed by Hashimura still overlaps with the compositions recited in instant claims 2 and 3.

Instant claim 4 recites that the spring steel further comprises at least one selected from Ni: 0.5% or less excluding 0% and Mo: 0.4% or less excluding 0%. Col. 3 lines 46-66 of Hashimura teach that the spring steel may also comprise 0.1-2.0 mass% Ni and/or 0.1-2.0 mass% Mo. Both of these ranges overlap with the compositional ranges of Ni and Mo recited in instant claim 4.

Instant claims 5 – 8 further limit the composition of the spring steel of instant claim 1. However, the compositional ranges of V, Mn, Cr, and Ni and/or Mo recited in instant claims 5 – 8 still overlap with the compositional ranges recited in col. 3 lines 26-66 of Hashimura.

Instant claims 10 and 11 further limit claims 5 and 8 by using the claim limitation “consisting essentially of.” The spring steel of Hashimura disclosed in col. 3 lines 26-66 satisfies this limitation because it does not require that the spring steel must contain any elements other than those recited in instant claims 10 and 11.

Instant claims 13 and 14 further limit claims 5 and 8 by using the claim limitation “consisting of.” The spring steel of Hashimura disclosed in col. 3 lines 26-66 satisfies

this limitation because it does not require that the spring steel must contain any elements other than those recited in instant claims 13 and 14.

Since the claimed compositional ranges of claims 1 – 14 either overlap or are within the ranges disclosed by Hashimura, a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed spring steel composition from the spring steel composition disclosed by Hashimura because Hashimura teaches the same utility (i.e. steel for a spring) in the whole disclosed range.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 – 14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/549,753. Although the conflicting claims are not identical,

they are not patentably distinct from each other because the claimed steel compositional ranges in the instant application overlap with the steel compositional ranges recited in 10/549,753. Although 10/549,753 does not teach formula (2), it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art (in this case 10/549,753). *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those ordinary skilled in the art. *In re Austin, et al.*, 149 USPQ 685, 688. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed spring steel composition from the spring steel composition disclosed by 10/549,753 because 10/549,753 teaches the same utility (i.e. a steel for a spring) in the whole disclosed range.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

9. Applicant's arguments filed October 29, 2008 have been fully considered but they are not persuasive.

Arguments are summarized as follows:

- a. The data present in the specification show distinct and patentable differences in properties between steels falling within the present claims, none of

which are anticipated, and similar steels whose compositions fall just outside the presently claimed compositional limitations. Table 1 of the present specification shows that when a spring steel that meets the compositional limitations according to the present claims and satisfies the formula $0.8x[\text{Si}]+[\text{Cr}] \geq 3.0$ that excellent fatigue life is obtained, whereas when one operates outside of this formula the spring steels provided show fracture.

b. Nagao relies upon the presence of inclusions, while minimizing aluminum reduces the formation of oxides. Nagao thus teaches away from Applicants' aluminum limitation even if broadly encompassed within a disclosed overall range of less than or equal to 0.1%. Nagao does not disclose or suggest the particular combinations in the instant claims and does not recognize the substantial benefits obtained when one operates within the presently claimed ranges. The fact that Nagao does not recognize or suggest the benefits stemming from Applicants' composition established patentability.

Examiner's responses are as follows:

a. The data presented in Applicant's arguments is not in declaration form and therefore is considered Applicant's argument. Applicant has not submitted factual evidence to show the criticality of a minimum of 1.2 mass% Si and a maximum of 2.5 mass% Si content. Also, Applicant has not shown the criticality of a minimum of 1.5 mass% Cr and a maximum of 4.0 mass% Cr content in order to satisfy the formula (2). Additionally Applicant has not shown the criticality of a value of greater than or equal to 3.0 for the value of $(0.8x[\text{Si}])+[\text{Cr}]$ in formula (2)

as compared to a value of 2.9 for example. Therefore, Applicant has not shown evidence rebutting the prima facie case of obviousness recited in the rejection above and as a result the Examiner maintains the rejection above.

b. Nagao teaches in [0009]-[0010] that the spring steel alloy comprises less than or equal to 0.1 mass% Al. Nagao does not teach that Al is required in the spring steel and therefore Nagao does not teach away from the instant invention since it discloses an overlapping composition of Al. Furthermore, the prior art references are not required to recognize the benefits stemming from the instant claim limitations. See MPEP 2144 IV.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

CF